Dixon P, Humble S.

How School Choice Is Framed by Parental Preferences and Family Characteristics: A Study of Western Area, Sierra Leone.

***Journal of School Choice: International Research and Reform* 2017, 11(1), 95-110.**

Journal of School Choice: International Research and Reform

How school choice is framed by parental preferences and family characteristics: A study of Western Area, Sierra Leone

--Manuscript Draft--

Manuscript Number:	WJSC-20160019R2
Article Type:	Empirical Analysis
Keywords:	civil war; household choice; preferences; schooling; post conflict zones; sub-Saharan Africa.
Corresponding Author:	Pauline Dixon Newcastle University Newcastle upon Tyne, UNITED KINGDOM
First Author:	Pauline Dixon
Order of Authors:	Pauline Dixon
	Steve Humble
Abstract:	This research set out to investigate how, in a post conflict area, parental preferences and household characteristics affect school choice for their children. A multinomial logit is used to model the relationship between education preferences and the selection of schools for 954 households in Freetown and neighboring districts, Western Area, Sierra Leone. The increased economic well-being of a family tends to increase the likelihood of choosing a non-government school. As a child gets older parents are more likely to select government over non-government schools. For girls, parents are twice as likely to select an NGO school than a government one. Where parental preference for girls is a 'safe environment' government is the preferred choice over a private proprietor school. Interestingly the level of household education does not affect the likelihood of attending any school management type.
Response to Reviewers:	Hi Bob, we have - rewritten the abstract - checked the document through and made changes where there were errors - added speculation around age and girl safety as suggested.

How school choice is framed by parental preferences and family characteristics: A study of Western Area, Sierra Leone

Pauline Dixon, Newcastle University, UK (corresponding author)
pauline.dixon@ncl.ac.uk

Steve Humble, Newcastle University, UK
steve.humble@ncl.ac.uk

Submission date: June 2016
Re submitted August 2016
Accepted September 2016

Pauline Dixon (pauline.dixon@ncl.ac.uk) is corresponding author, Newcastle University, King George VI Building, Newcastle Upon Tyne, NE1 7RU, England.

Abstract

This research set out to investigate how, in a post conflict area, parental preferences and household characteristics affect school choice for their children. A multinomial logit is used to model the relationship between education preferences and the selection of schools for 954 households in Freetown and neighboring districts, Western Area, Sierra Leone. The increased economic well-being of a family tends to increase the likelihood of choosing a non-government school. As a child gets older parents are more likely to select government over non-government schools. For girls, parents are twice as likely to select an NGO school than a government one. Where parental preference for girls is a 'safe environment' government is the preferred choice over a private proprietor school. Interestingly the level of household education does not affect the likelihood of attending any school management type.

How school choice is framed by parental preferences and family characteristics: A study of Western Area, Sierra Leone

Abstract

This research set out to investigate how, in a post conflict area, parental preferences and household characteristics affect school choice for their children. A multinomial logit is used to model the relationship between education preferences and the selection of schools for 954 households in Freetown and neighboring districts, Western Area, Sierra Leone. The increased economic well-being of a family tends to increase the likelihood of choosing a non-government school. As a child gets older parents are more likely to select government over non-government schools. For girls, parents are twice as likely to select an NGO school than a government one. Where parental preference for girls is a 'safe environment' government is the preferred choice over a private proprietor school. Interestingly the level of household education does not affect the likelihood of attending any school management type.

Key words: civil war; household choice; preferences; schooling; post conflict zones; sub-Saharan Africa.

Introduction

In the late 18th century following the American War of Independence, freed African-American slaves evacuated by the British, arrived in Sierra Leone and established settlements including Granville Town and Freetown. The Sierra Leone Crown Colony was proclaimed by the British in 1787 and was made up of a 280-square mile coastal enclave in West Africa. After the abolition of slavery in 1807 liberated Africans, West Indians and Americo Liberian 'refugees' immigrated into the newly established Freetown and coastal enclave. These immigrants created an ethnic group, the Creoles, made up of former slaves and their descendants (Lange, 2009). By 1892 a number of Creoles held senior positions within the colonial administration (Reno, 1995). The British declared a 27,000 square mile region surrounding the Sierra Leone Colony in 1896, known as the Sierra Leone Protectorate. Within the Protectorate the British employed a

hands off form of rule that empowered the local elite to run the administration by traditional means (Lange, 2009). These two separate forms of administration continued until 1951. This had profound consequences for long-term development. Just as in other British colonies, missionaries were an important agent in the development of educational systems within Freetown and the coastal area (Gallego and Woodberry, 2010). By the mid nineteenth century around one fifth of children in Freetown attended a Christian mission school (Frankema, 2012). Owing to hostilities towards the Creoles and their association with Christian missionaries, the areas outside of the Sierra Leone Colony, i.e., the Protectorate did not experience the expansion of Christian mission schools. In the tribal hinterlands of Sierra Leone the two largest tribes, the Temne and the Mende, excluded Christian missionaries in order to retain as much independence from the coastal Creoles. They embraced Islamic beliefs and interwove them with their own traditional practices in order to legitimize the refusal of missionary interventions. Thus schooling in these areas was limited owing to teaching being 'conducted on an individual basis by spiritual leaders or imams' (Frankema, 2012, p. 346).

In 1951 the Sierra Leone People's Party (SLPP) was formed by Protectorate leaders and was headed by Sir Milton Margai. The aim was to unite the Colonial and Protectorate legislatures in order to achieve independence from the British. Independence was granted in 1961. However on the unexpected death of Sir Milton in 1964 and the consequential appointment of his brother as Prime Minister, protests and riots prevailed. Distrust and accusations of corruption were being voiced from the opposition party the All People's Congress (APC) (Pham, 2005). Elections in 1967 saw the APC come to power with Siaka Stevens as their Prime Minister. What followed included military coups, coup d'états, civil unrest, states of emergency and nationwide demonstrations. The result was a one party state, the APC becoming in 1978, the only legal political party in Sierra Leone. After an 18-year rule, Stevens stepped down with Major General Momoh succeeding him as Prime Minister in the one party state. In 1991, Momoh announced a review into the 1978 one-party constitution. However this was viewed with great suspicion and again another military coup resulted in Momoh's exile to Guinea. A combination of the coup,

continued unrest, and the raging war in neighboring Liberia saw the start of a ten-year civil war (Zack-Williams, 2011).

It has been acknowledged that education plays a central role regarding a country's stability and development (Ndaruhutse et al, 2011; Parvanello and Othieno, 2008). Indeed, some have attributed the civil war in Sierra Leone not only to decades of poor governance but also the lack of access to education for the young (Humphreys and Weinstein, 2004). This 'neglect of education', according to Fanthorpe (2003):

> 'helped to create a large cohort of unemployed and barely literate young people, easily conscripted by both political and criminal organizations' (p. 54).

The civil war resulted in the destruction and disruption of the schooling system. It has been estimated that most of Sierra Leone's education infrastructure was destroyed during the war. Schools were damaged through looting and demolition. Many teachers fled the fighting fearing for their own lives as well as their pupils; children were abducted from schools to be conscripted into the fighting forces (UNESCO, 2011).

Since the end of the conflict in Sierra Leone, a number of different providers have become involved in the delivery of schooling. These include communities, faith based missions, non-governmental organizations (NGOs) and the private sector (Boak and Dolan, 2011). Faith based missions (independent church, established church, and mosque schools) are government assisted and as such are not formally recognized as non-state providers. Independent private proprietor schools are run by individuals, funded by student fees, with the potential to make surpluses or profits. NGOs and community groups also run schools in Sierra Leone and are typically not for profit (Tooley and Longfield, 2013). The decentralization of education away from the flaws of state provision prior to the civil war has been regarded as fundamental for peace building in Sierra Leone (OECD, 2010). The Sierra Leone Government delivers services where possible, but there are also policy frameworks in place to support and regulate the variety of providers in education (OECD, 2010). In 2006, four years

after the war had ended, the government implemented an Educational Management Information System (EMIS) used to track resource allocation and identify areas of need (UNESCO, 2011).

It has been recognized over the last twenty years that in developing countries there exists a number of different school management types providing education. These are available to parents of varying income levels, including the poor (Tooley, 2009; Dixon, 2013; Dixon et al, 2015; Stanfield, 2015; Alderman et al, 2001; Ngware et al., 2009; Rose, 2009; Tooley et al, 2005: Mehrotra, 2007; Walford, and Srivastava, 2007; Stern and Heyneman, 2013; Härmä, 2015). Parents in developing countries are making decisions and choices about where to educate their children.

However, there is a paucity of research around choice and schooling in developing contexts with little, if any, carried out in post conflict zones. What does exist tends to focus on school costs (Akaguri, 2014) and quality (Rolleston and Adefeso-Olateju, 2014; Härmä, 2011b, 2013). A number of studies around household choice and schooling have been carried out in Nigeria (Tooley and Yngstrom, 2014; Härmä, 2013, 2011a, 2011b.). Parents were interviewed in schools in Nigeria in order to investigate perceptions of schooling and the reasons behind private and government school choice (Härmä, 2011a, 2011b). Private school choosers rated quality as a main preference criteria (64% Kwara State and 77% Lagos). Government choosers did not rate quality so highly (21% Kwara and 44% Lagos). Around one third of all parents interviewed in Lagos, and one third in government schools in Kwara, expressed the importance of affordability. In Lagos one third of parents stated the preference for schools being close to their homes. This study also found that a school's reputation and the relationships between school owners and parents were also important when making choices.

A household survey made up of 1,005 households (Tooley and Yngstrom, 2014) from diverse income groups classified as poor, near poor and middle class in Lagos State found that older children are more likely to attend government schools than private. Girls and boys were just as likely to attend government and private schools, being equally represented across school types. Government schools were favored over private around affordability, but parental preferences

for private schools were based on quality criteria for all income groups. Children being safe, 'looked after well' and learning in small classes were highlighted as parental reasons for choice (Tooley and Yngstrom, 2014). Class size has also shown to be important with regards choice in Kenya (Nishimura and Yamano, 2013). The study showed that as the pupil teacher ratio increased in government schools there was an increased likelihood of children transferring to private schools.

Affordability is regarded as an issue for choice in rural Kenya and Ghana. Children from poorer households have a lower probability of attending private schools due to low family income (Nishimura and Yamano, 2013; Akaguri, 2014). Parents in Ghana and Nigeria were shown to prefer private over government schools because of perceived quality education (examination results) and the attention children received in class (Rolleston and Adefeso-Olateju, 2014).

To summarize the literature set out above, parental choice places emphasis on school quality, reputation, proximity to home, affordability and safe environment. Regarding household characteristics the general consensus seems to show that the older the child the more likely they will attend a government school. However, the research shows mixed findings regarding the gender and income effects.

Background

According to the World Bank[1] in 1971 only 39% of children in Sierra Leone were enrolled in primary schools. By 2010 the figure had risen to a primary school completion rate of 76% (UNESCO, 2013). However UNESCO estimate that there were still 233,000 primary aged children out of school in 2010. These statistics are difficult to interpret for the area considered in this paper owing in part to the historical context. As discussed in the introduction missionaries were an important agent in the development of education within Freetown and the coastal area. This was not the case in the Protectorate.

Focusing only on data available for Freetown and the neighboring coastal enclave shows that prior to the start of the civil war in 1991 different school

[1] http://data.worldbank.org/country/sierra-leone

management types were in operation (Tooley and Longfield, 2013). The Figure below highlights the growth of the different types of schools since 1990 in this area of Sierra Leone. It's clear from the diagram that there has been a growth of all school management types but interestingly NGO schools still account for a relatively small proportion.

[insert Figure 1 about here]

There is little doubt regarding the poverty within Sierra Leone with literacy for the over 15-year age group reported at 38% and life expectancy at birth being 47.3 years (UNDP, 2009).

Method

This paper presents data that were gathered as part of a larger research project funded by the Sir John Templeton Foundation. The project was undertaken in three post-conflict countries, Sierra Leone, Liberia and South Sudan. There were multiple components to the research, including a household survey, which explored the decentralization policies implemented by the government. This paper only considers data gathered from households in Freetown and the neighboring coastal enclave within Western Area, Sierra Leone in order to investigate how school choice is framed by parental preference and family characteristics. All parents were informed before the start of the household questionnaire that the purpose of the assessment exercise was to investigate parental choice around different types of school management, that participation was voluntary, and that the results of the assessment would be kept strictly confidential and for research use only.

Procedure

The data reported in this paper were collected from 954 households in Western Area of Sierra Leone, specifically in the localities of Freetown, 7 Batalion, Funkia, Goderich and Lumley. In these areas parents have the option to choose from all types of schooling discussed in this paper without restriction. Only households that could afford all types of school were analyzed in this data set. A team of 50 survey administrators under the supervision of a researcher from Newcastle University collected the data. The People's Educational Association of Sierra

Leone provided in-country support. The administrators were grouped into pairs to carry out a systematic household survey. They had been given training specifically for this project. The survey administrators interviewed the head of the household in a random sample of homes. When there was either a non-response or the household was one without children then the team moved onto the next 'available' household. The administrators read out the household questionnaire to the participants in their local language to avoid any literacy issues.

Data, Sample and Survey content

Of the 954 households surveyed all had at least one child of school age. The mean number of children in this household was 2.17 with a standard deviation (SD) of 0.967. Schools attended in this sample included all types available in Western Area (NGO, private proprietor, government and faith based mission). The survey focused on the decisions parents made for their eldest child currently attending school. The mean age for these children was 11.95 years (SD 3.852 years) and 52.2% were girls. The table below shows the school management type attended.

[insert table 1 about here]

Regarding possessions, 70% of the families owned a mobile phone, with only 10% having a computer. 5% possessed a car and only 2% owned their own home. These are households in the city and so very few owned any livestock with only 2% having goats. Half of the parents reported they had not completed primary education and only 12.8% stated they had attended secondary school (see table below). The great majority of the fathers had an income (96.3%) being unskilled labourers, market traders and fisherman (73.2%). Parents shared the decision making for their children's schooling (49% fathers and 44% mothers).

[insert table 2 about here]

Parents were asked to select their three main reasons for choosing their eldest child's school. The percentage of parents selecting each one of the six

given preferences is given in the table below. Most households stressed the quality of teaching and the school being safe as important reasons for selecting any type of schooling. Carrying out a chi-squared test there was no significant difference in their preferences for gender.

[insert table 3 about here]

The demographic household characteristics used as independent variables are set out below:

- Gender of the pupil (boy = 0, girl = 1);
- Pupil's age in years and fractions of a year;
- Total number of children in the family;
- School costs: fees, books, lunch, transport, tuition etc.;
- Family Income;
- Family Expenditure;
- Highest Level of Education in the Household (on a scale from 0 to 3);
- Total number in the family[2];
- The Proportion of non-Government to Government schools in the community.

The household survey asked a number of questions around family possessions and wealth. It was necessary to collapse some of them into a smaller set of combined factors. Otherwise there would be too many independent variables to fit a sensible model to the data. These have been combined into a smaller set of measures using principal factor analysis, rotated using the Varimax procedure. A 2-factor solution was found to be optimal. The combined factors were given the following descriptions:

- **Factor 1** - Wealth1: Generator, Smart Phone, Computer, Gas Stove, Fridge Freezer, Canoe, Motorbike, Minibus;

[2] The variable 'total number in the family' was included as in developing countries households often include extended family members. Therefore the number of family members may be an indicator of a family's willingness to pay for education.

- **Factor 2** - Wealth2: TV, DVD, Cellphone.

These two factors explain 27.7% of the variation in this set of data. Factor scores for these wealth factors were derived for each pupil and standardized to a mean of 50 and standard deviation of 10.

Empirical Strategy

Multinomial logistic regression (MNL) is used to estimate the following equation:

$$C_i = \alpha + \boldsymbol{\beta}\, \mathbf{D_i} + \boldsymbol{\gamma} \mathbf{P_i} + \varepsilon_i$$

C_i is the type of school that parent i has selected for their child. $\mathbf{D_i}$ is the vector controlling for household, parent and child demographic characteristics. These include gender, age, number in the household and number of children, parent's highest education, household income and expenditure, cost of schooling to the family, two wealth factors, and the proportion of non-government schools in the households community. $\mathbf{P_i}$ is a vector of each household's preferences for a set of school characteristics and ε_i is the unobserved factors.

This research sets out the results of the multinomial logit model (MNL):

$$\Pr(C_i = s) = \exp(\alpha_s + \beta_s D_i + \gamma_s P_i) \Big/ \sum_{s=0}^{3} \exp(\alpha_s + \beta_s D_i + \gamma_s P_i)$$

where s is the choice of enrolments: Government (s=0); Private (s=1); Faith Based Mission (s=2); NGO (s=3).

By estimating this MNL model we can directly test whether the household preferences and demographics affect the choice of attending different school management types. This model assumes that all parents had the option to select any of the school types.

Results

The table below displays the coefficient estimates of the MNL model[3] in terms of

[3] Measures show that the model fits the data well, with the likelihood ratio test ($\chi^2(51)= 409.316$, $p < 0.0001$), implying that the model as a whole fits significantly better than an empty model with no predictors.

odds ratios with the base group being government schools. Each coefficient indicates the change in the odds that a parent selects a given type of school instead of a government school for a one standard deviation increase in the preference for the respective school characteristic[4].

[insert table 4 about here]

Four parental preferences around school choice are shown to be statistically significant. Parents who stated a preference when selecting schools for their children by academic performance are more likely to send their children to a faith based mission school. The results show the likelihood of parents selecting a faith based mission school is approximately 3 times as large as the likelihood of selecting a government ($p < 0.01$). School reputation and strong disciplinary environment are also seen as important reason for parents selecting faith based mission schools instead of government schools with factors of 2.052 ($p<0.05$) and 1.647 ($P<0.1$) respectively. Parents who state that affordability is a preference are more likely to send their children to government than NGO schools[5]. All else equal there is a decrease in the likelihood of selecting an NGO instead of a government school by a factor of 0.287 ($p<0.1$).

Individual characteristics show a general pattern across all non-government schools. There is a decrease in the likelihood of parents sending a child to these types of schools, as the child gets older. Regarding gender, there is an increase in the likelihood that girls attend NGO schools rather than government ones. Parents are twice as likely to select an NGO school for their

---

The Pearson statistic for the measure of goodness of fit (χ^2 (2739)=2894.033, $p>0.05$) implies that there is no significant difference between the expected and actual values (Train, 2009; Long, 1977). Pseudo-R^2 likelihood ratio indices: 18.6% (McFadden, 1974), 35% (Cox and Snell, 1989) to 38.8% (Nagelkerke, 1991).

[4] For continuous independent variables the odds ratio is exp[SDx Coeff.] This gives an estimated odds ratio for an increase of 1 SD. Where a 1 standard deviation is a meaningful change in the respective continuous variable. Within this definition the dichotomous variables were taken to have an standard deviation of 1, giving the odds ratio of exp[Coeff.]. Each of the coefficients indicates the change in the odds that a parent selects a given type of school instead of a government school for a 1 SD increase in his or her importance rating of the respective school characteristic.

[5] Diagnostic checks using tolerance and variance inflation factor methods were used to test for collinearity between the variables. It was found that no colinearity was present. The variance inflation factor check for 'affordability', 'income' and 'expenditure' gave values of 1.418, 1.439, 1.435 respectively, all below 10 and close to 1. For the tolerance check the values were 0.705, 0.695, and 0.697 (respectively), all above 0.2, again showing no collinearity. Collinearity diagnostics checks to see if the matrix was ill-conditioned gave low eigenvalues, also indicating that the values were not dependent.

girls than government. There is a decrease in the likelihood that girls would be sent to a faith based mission school rather than a government school by a factor of 0.706 ($p<0.1$). The more children in the family the more likely the child is to attend an NGO school rather than a government one. The likelihood of selecting an NGO is approximately two times as large as the likelihood of selecting a government school. Parents with higher family incomes and more luxury possessions (Wealth 1) are more likely to select NGO schools as opposed to government. Increasing this income characteristic by 1 SD increases the likelihood of selecting an NGO school by a factor of 2.726 ($p< 0.01$). The Wealth 1 indicator suggests that households are 7.714 ($p<0.01$) times more likely to select an NGO school than a government school for every 1 SD increase in this wealth rating. The Wealth 1 indicator also shows that this is true for private and faith based mission schools but with slightly lower factors of 1.493 ($p<0.05$) and 1.309 ($P<0.05$) respectively. It is interesting to note that the highest household education is not significant for all the school types.

The proportion of non-government to government schools in the community seems to affect choice when a household is deciding where to send their child. Parents sending their children to faith based mission schools prefer to keep their child in non-government education as the number of government schools increases in their community. The opposite is true for NGO schools with a decrease in the likelihood of selecting an NGO school as opposed to a government school by a factor of 0.579 ($p<0.01$).

Running the MNL model for boys and girls separately highlights four areas[6]. First, the proportion of non-government to government schools seems to affect choice for boys. Parents sending their boys to private and faith based mission schools have a preference for their child to remain in non-government education, but the opposite is true for those attending NGOs. Second, if a parent's preference includes school reputation, there is an increase in the likelihood that they will send their male child to a government rather than an NGO school. Third, for girls, parents' preferences around school safety are associated with a decrease in the likelihood of selecting a private school as opposed to a government one by a factor of 0.365 ($p<0.01$). And finally those

[6] See Appendix for the estimates of the model for boys and girls separately

families with higher household education are more likely to select NGO schools as opposed to government for their girls. Increasing this individual household characteristic by 1 SD increases the likelihood of selecting NGO schools by a factor of 2.596 ($p< 0.05$).

Concluding remarks

There is a lack of research around parental choice in developing countries and virtually nothing in post conflict zones. This could be partly due to a misconception around school availability in such settings. However, it is now recognized that in Western Area, Sierra Leone more than a decade after the end of the civil war, the government is carrying out policies that stimulate the decentralization of education allowing a variety of providers to operate (OECD, 2010; Boak and Dolan, 2011, Tooley and Longfield, 2013). This variety offers parents choice.

The findings reported here show that parents who value particular aspects of a school are more likely to send their child to that school. This research suggests that none of the household preferences were significant when looking at private proprietors. This indicates that stronger preferences among parents who send their children to private proprietor schools are not associated with a greater tendency to select private proprietor or government schools. This finding disagrees with the literature from Nigeria on two measures. First, in Nigeria quality is a main preference criteria for private school choosers and second, government schools are favored over private around affordability (Härmä, 2011a, 2011b; Tooley and Yngstrom, 2014).

Parents are more likely to send their child to a faith based mission school than a government school if their preferences indicate they value strong discipline or school reputation or academic performance. Where a parent stated a preference for affordability parents were more likely to send their child to a government than an NGO school. In the literature reputation, academic performance and affordability do feature as indicators of how parents choose (Tooley and Yngstrom, 2014; Rolleston and Adefeso-Olateju, 2014; Härmä, 2011b, 2013). However strong discipline has until now not been identified as a significant preference indicator.

Certain household characteristics are also indicators of the likelihood of attending certain types of school. In this post conflict situation, the older the child the more likely they are to attend a government school. It could be conjectured that a lack of non-government provision at the junior and senior secondary levels reduces choice for older children. A child's gender seems to increase the likelihood of attending different school management types over others – i.e., being a girl implies attending an NGO rather than a government and a government over a faith based mission school. Parents who state a preference for safety for their girls choose government schools over private proprietors[7]. One possible explanation could be that as private proprietor schools have rapidly increased since the end of the conflict, establishing parental trust regarding the safety of girls may take time. In other literature gender does not seem to affect the likelihood of attending a specific school type but age does (Tooley and Yngstrom, 2014).

The increased economic well-being of a family tends to increase the likelihood of the child choosing a non-government school. Costs of schools interestingly do not affect parental choice but the proportion of non-government to government schools does.

The policies implemented by the government in Sierra Leone have allowed different school management types to offer education provision to parents. This research suggests that parents living in difficult circumstances, having faced the troubles associated with war and conflict are active choosers. The results are interesting and suggest that greater inquiry is needed around the topic of how parents select schools for their children in such circumstances. Parental interviews focusing specifically on the findings reported here could enlighten the reasons behind school choices and parental preferences.

Disclosure statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

[7] When running the MNL separately for boys and girls

The author(s) received funding from the Sir John Templeton Foundation for this research.

References

Akaguri, L. (2014). Fee-free public or low-fee private basic education in rural Ghana: how does the cost influence the choice of the poor? *Compare, 44(2),* 140–161.

Alderman, H., Orazem, P. F., and Paterno. E. M. (2001). School Quality, School Cost and the Public/Private School Choices of Low-Income Households in Pakistan. *Journal of Human Resources 36(2*), 304-326.

Boak, E., and Dolan, J. (2011). *State-building, Peace-building and Service Delivery in Fragile and Conflict affected States. Case Study: Sierra Leone.* Reading: CfBT.

Collier, P. and Hoeffler, A. (2004). Greed and Grievance in Civil War. *Oxford Economic Papers, 56 (4),* 563-595.

Cox, D. R., and Snell, E. J. (1989). *Analysis of Binary Data*. 2nd ed. London: Chapman & Hall.

Dixon, P. (2013). *International Aid and Private Schools for the Poor: Smiles Miracles and Markets.* Cheltenham Gloucester: Edward Elgar.

Dixon, P., Humble, S., and Counihan, C. (2015). *Handbook of International Development and Education*. Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.

Fanthorpe, R. (2003). Humanitarian aid in post-war Sierra Leone: the politics of moral economy, In: S. Collinson (Ed.), *Power, Livelihoods and Conflict*, (pp. 53-56), Humanitarian Policy Group, Report 13, London: Overseas Development Institute.

Frankema, E. P. (2012). The origins of formal education in sub-Saharan Africa: was British rule more benign? *European Review of Economic History, 16(4),* 335-355.

Gallego, F. A., and Woodberry, R. (2010). Christian Missionaries and Education in Former African Colonies: How Competition Mattered. *Journal of African Economies, 19(3),* 294-329.

Härmä, J. (2011a). *Household Survey on Private Education in Lagos*, DFID-

Education Sector Support Programme in Nigeria, Report LG503. Retrieved from https://www.esspin.org/reports/download/332-file-LG-503-Household-Survey-on-Private-Education-in-Lagos

Härmä, J. (2011b). *Study of Private Schools in Kwara State*, DFID-Education Sector Support Programme in Nigeria, Report KW326. Retrieved from https://www.esspin.org/reports/download/323-file-KW-326-Study-of-Private-Schools-in-Kwara-State-Oct2011.pdf

Härmä, J. (2013). Access or quality? Why do families living in slums choose low-cost private schools in Lagos, Nigeria? *Oxford Review of Education, 39(4*), 548–566.

Härmä, J. (2015). Private schooling and development: an overview, In P. Dixon, S. Humble, and C. Counihan (Eds.), *Handbook of International development and Education* (pp. 171-199). Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.

Humphreys, M. and Weinstein, J. (2004). *What the Fighters Say: A Survey of Ex-Combatants in Sierra Leone.* CGSD Working Paper No. 20. New York: Colombia University. Retrieved from http://www.columbia.edu/~mh2245/Report1_BW.pdf

Lange, M. (2009). *Lineages of Despotism and Development: British Colonialism and State Power.* Chicago: University of Chicago Press.

Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables.* Thousand Oaks, CA: Sage.

McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers of econometrics* (pp. 105-142). New York: Academic Press.

Mehrotra, S., and Panchamukhi, P.R. (2007). Universalising elementary education in India: Is the private sector the answer? In P. Srivastava & G. Walford (Eds.), *Private schooling in less economically developed countries: Asian and African perspectives* (pp. 129–151). Oxford, UK: Symposium Books.

Nagelkerke, N.J.D. (1991). A note on a general definition of the coefficient of determination. *Biometrika (78),* 691-692.

Ndaruhutse, S., Mansoor, A., Chandran, R., Cleaver, F., Dolan, J., Sondorp, E., Vaux, T. (2011). *State-building, peace-building and service delivery in fragile*

and conflict-affected states: literature review. Final report. Reading: CfBT Education Trust.

Ngware, M. W., Oketch, M., Ezeh, A. C., and Mudege. N. N. (2009). Do Household Characteristics Matter in Schooling Decisions in Urban Kenya? *Equal Opportunities International 28(7)*, 591-608.

Nishimura, M., and Yamano, T. (2013). Emerging Private Education in Africa: Determinants of school Choice in Rural Kenya. *World Development, 43,* 266-275.

OECD. (2010). *Monitoring the Principles for Good International Engagement in Fragile States and Situations: Country Report 5: Sierra Leone*. Paris: OECD.

Pavanello, S. and Othieno, T. (2008). *Improving the Provision of Basic Services for the Poor in Fragile Environments: Education Sector International Literature Review*. Report prepared for the AusAID Office of Development Effectiveness. London: ODI.

Pham, J. P. (2005). *Child Soldiers, Adult Interests: The Global Dimensions of the Sierra Leonean Tragedy.* New York: Nova Publishers.

Reno, W. (1995). *Corruption and State Politics in Sierra Leone.* New York: Cambridge University Press.

Rolleston, C. and Adefeso-Olateju, M. (2014). De facto privatisation of basic education in Africa: a market response to government failure? A comparative study of the cases of Ghana and Nigeria, in I. Macpherson, S. Robertson, and G. Walford (Eds.), *Education, Privatisation and Social Justice: Case Studies from Africa, South Asia and South East Asia*, (pp.25–44). Oxford: Symposium Books.

Rose, P. (2009). Non-State Provision of Education: Evidence from Africa and Asia. *Compare: A Journal of Comparative and International Education, 39(2),* 127-134.

Stanfield, J. (2015). Affordable learning: transforming education at the bottom of the pyramid, In: P. Dixon, S. Humble, and C. Counihan (Eds.), *Handbook of International development and Education* (pp. 131-148). Cheltenham, Gloucester, UK and Northampton, MA, USA: Edward Elgar.

Stern, J., and Heyneman, S. (2013). Low-fee private schooling: the case of Kenya, In P. Srivastava (Ed.), *Low-Fee Private Schooling: Aggravating Equity or Mitgating Disadvantage?* (pp. 105-128), Oxford: Symposium Books.

Tooley, J. (2009). *The Beautiful Tree: A Personal Journey into how the world's poorest people are educating themselves.* Viking: Penguin.

Tooley, J., Dixon, P., and Olaniyan, O. (2005). Private and Public Schooling in Low Income Areas of Lagos State, Nigeria: A Census and Comparative Survey. *International Journal of Educational Research, 43(3),* 125-146.

Tooley, J., and Longfield, D. (2013). Private Primary Education in Western Area, Sierra Leone, Working Paper. Retreived from https://egwestcentre.files.wordpress.com/2014/07/00-report-sierra-leone-2014-01-06.pdf

Tooley, J., and Yngstrom, I. (2014). *School Choice in Lagos State,* Working Paper, DFID. Retrieved from http://r4d.dfid.gov.uk/pdf/outputs/Educ_Nigeria/61517_Final_Summary_Lagos_School_Choice.pdf

Train, K. E. (2009). *Discrete Choice Methods with Simulation*. New York, NY: Crambridge University Press.

UNDP (2009). *Human Development Report, 2009: Overcoming barriers: Human mobility and development.* New York: United Nations Development Programme (UNDP).

UNESCO (2011). *The Hidden Crisis: Armed Conflict and Education. EFA Global Monitoring Report*. Paris: UNESCO.

UNESCO (2013). *Sierra Leone Eucation Country Status Report.* Dakar: UNESCO.

Walford, G., and Srivastava, P. (2007). Examining private schooling in less economically developed countries: Key issues and new evidence. In P. Srivastava and G. Walford (Eds.), *Private schooling in less economically developed countries: Asian and African perspectives* (pp. 7–14). Oxford, UK: Symposium Books.

World Bank (2007). *Education in Sierra Leone Present Challenges, Future Opportunities*. Washington D C: World Bank.

Zack-Williams, T. (2012). *When the State Fails: Studies on Intervention in the Sierra Leone Civil War.* London: Pluto Press.

Appendix

[insert table 5 and 6 about here]

Tables and Figures

Figure 1 Cumulative number of schools, by establishment date and management type

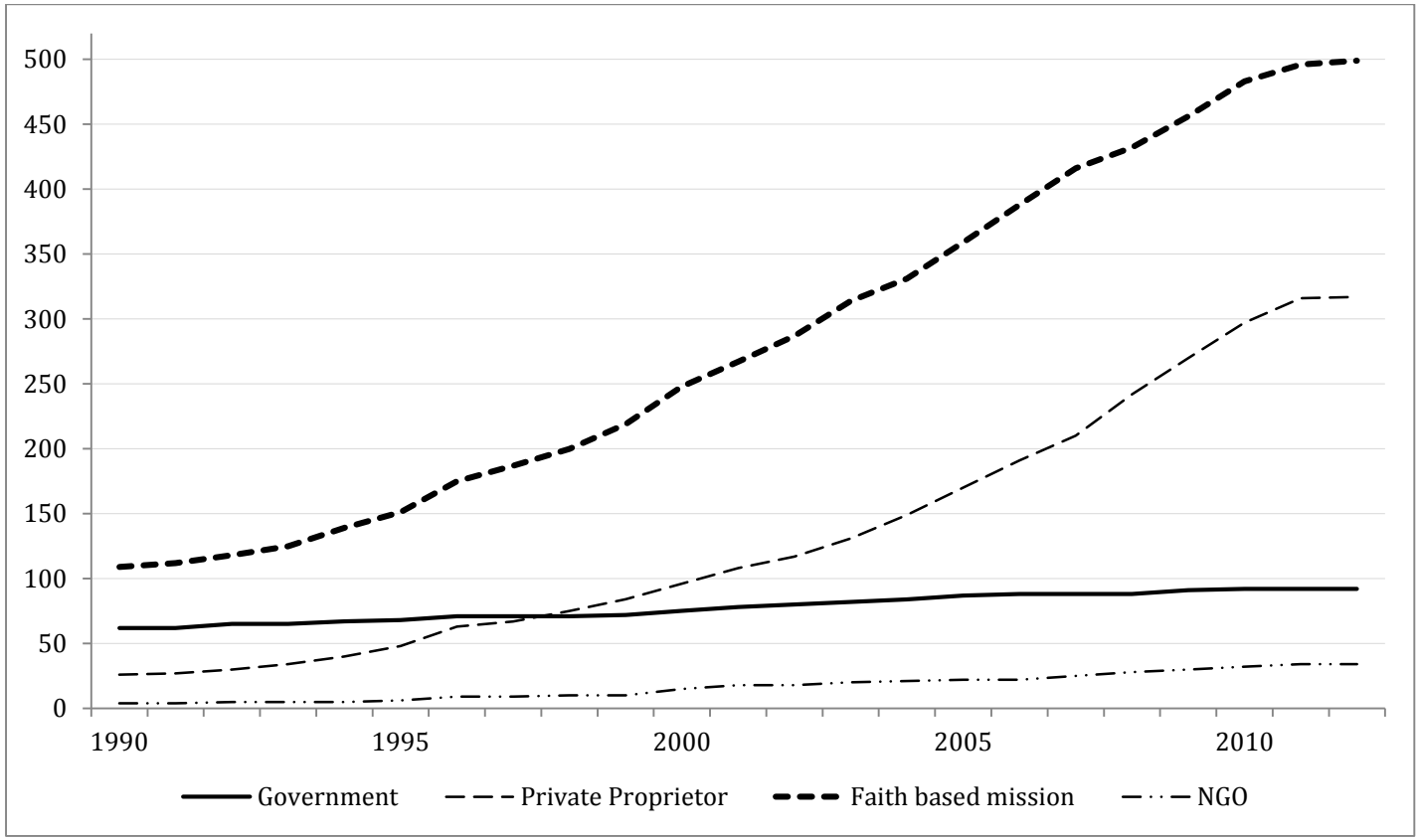

Table 1 School type attended by the eldest child in the household

	Eldest child	Percent
Government	265	27.8
Private Proprietor	467	49.0
Faith Based Mission	180	18.9
NGO	42	4.4
Total	954	100.0

Table 2 Characteristics of child's household by type of school attending

Item	Government	Private Proprietor	Faith Based Mission	NGO	Total
Total number in household♯	4.3	4.3	4.1	4.3	4.2
Children in household♯	2.2	2.2	2.2	2.3	2.2
Highest household education level					
None	50.5	51.3	54.4	31.0	50.7
Primary	24.2	15.8	18.3	9.5	18.3
Senior Secondary	11.3	12.6	15.6	9.5	12.8
Vocational/Higher Education	14.0	20.3	11.7	50.0	18.2
Monthly Household Income (SLL 10k) ♯	45.4	52.4	40.8	116.8	51.6
Monthly Household Expenditure (SLL 10k)♯	12.4	15.8	12.8	21.3	14.5
Monthly school costs (SLL 10k) ♯	2.1	4.9	2.0	7.8	3.7
Proportion of non-gov to gov school♯	7.9	8.0	8.9	6.8	8.1
Household assets					
Generator	19.8	28.4	21.3	54.8	25.9
TV	67.6	73.3	68.0	78.6	70.9
DVD	64.1	70.9	63.5	78.6	68.0
Cellphone	69.1	73.1	64.0	88.1	70.9
Smart Phone	15.3	18.2	18.0	42.9	18.5
Refrigerator	7.6	12.8	10.7	23.8	11.5
Freezer	11.8	17.1	13.5	45.2	16.2
Computer	4.2	11.7	10.1	40.5	10.6
Motorbike	0.4	1.3	0.0	2.4	0.8
Car	1.1	6.3	1.7	33.3	5.21
Canoe	1.1	1.7	1.1	2.4	1.5

Notes: ♯denotes results that are averages, all others are percentages - Currency 5,524.56 Sierra Leonean Leone (SLL) = $1; Monthly expenditure is based on cost for food, fuel, rent and mobile phone charges; Monthly school costs include termly school fees, school books, stationary, lunch cost, transport costs, sports costs and tuition fees.

Table 3 Parent's preferences for various school characteristics

Preference	Important	Not important
Affordability	15.7	84.3
Strong disciplinary	28.6	71.8
Safe school environment	43.1	56.9
School reputation	22.2	77.8
Academic performance	24.5	75.5
Quality of teaching	44.2	55.8

Table 4 Estimates of the Empirical Model

	School Type		
	Private Proprietor	Faith Based Mission	NGO
Parental preferences			
Affordability	1.193 (0.297)	0.867 (0.308)	0.287* (0.674)
Strong disciplinary environment	1.107 (0.261)	1.647* (0.296)	0.476 (0.589)
Safe school environment	0.693 (0.261)	1.185 (0.294)	0.688 (0.605)
School reputation	1.048 (0.277)	2.052** (0.325)	0.499 (0.633)
Academic performance	1.376 (0.262)	3.196*** (0.316)	0.433 (0.581)
Quality of teaching	1.005 (0.247)	1.217 (0.275)	0.411 (0.572)
Household characteristics			
Gender (Girl=1)	0.842 (0.181)	0.706* (0.209)	2.122* (0.401)
Age	0.226*** (0.031)	0.473*** (0.035)	0.254*** (0.058)
No. of children in family	0.946 (0.155)	1.203 (0.189)	2.004* (0.386)
Total number in family	1.035 (0.102)	0.765 (0.129)	0.562 (0.285)
School costs	0.993 (0.071)	1.076 (0.081)	1.198 (0.154)
Wealth 1	1.493** (0.014)	1.309** (0.016)	7.714*** (0.021)
Wealth 2	1.186* (0.010)	1.076 (0.011)	1.155 (0.023)
Family Expenditure	1.659** (0.014)	1.104 (0.017)	0.987 (0.026)
Family income	0.990 (0.013)	0.879 (0.017)	2.726*** (0.020)
Highest Household Education	1.022 (0.087)	0.970 (0.103)	1.174 (0.188)
Proportion of non-Gov/Gov	1.126 (0.027)	1.484*** (0.027)	0.579*** (0.221)
Constant	0.623 (1.316)	0.339 (1.540)	3.582 (2.783)

Analysis includes 954 observations. Omitted category for school type in Government school.
Standard errors in parenthesis. *p < 0.10; **p <0.05; ***p < 0.01

Table 5 Estimates of the Empirical Model – Boys only

	School Type		
	Private Proprietor	Faith Based Mission	NGO
Household preferences			
Affordability	1.763(0.440)	1.046 (0.454)	0.112** (0.966)
Strong disciplinary environment	1.192(0.381)	1.116 (0.426)	0.333 (0.827)
Safe school environment	1.199(0.383)	1.234 (0.430)	0.561 (0.835)
School reputation	0.689(0.434)	1.043 (0.493)	0.093*** (0.929)
Academic performance	1.634(0.391)	3.190*** (0.483)	0.259 (0.866)
Quality of teaching	0.988(0.350)	1.570 (0.396)	0.420 (0.770)
Household characteristics			
Age	0.182***(0.050)	0.416**(0.054)	0.199***(0.083)
No. of children in family	1.193(0.242)	1.361(0.281)	2.533*(0.551)
Total number in family	0.826(0.161)	0.673(0.192)	0.448(0.407)
School costs	1.115(0.106)	1.289(0.121)	1.188(0.208)
Wealth 1	1.965***(0.021)	1.486**(0.025)	9.302***(0.033)
Wealth 2	1.333**(0.015)	1.250(0.017)	1.412(0.030)
Family Expenditure	1.146(0.014)	0.806(0.024)	0.526(0.035)
Family income	1.141(0.018)	0.858((0.028)	3.958***(0.031)
Highest Household Education	1.041((0.126)	1.095(0.149)	0.744(0.256)
Proportion of non-Gov/Gov	1.397**(0.037)	1.433**(0.041)	0.512***(0.284)
Constant	0.194(1.979)	3.383 (2.527)	303(4.081)

Omitted category for school type in Government school. Standard errors in parenthesis. *p < 0.10; **p <0.05; ***p < 0.01

Table 6 Estimates of the Empirical Model – Girls only

	School Type		
	Private Proprietor	Faith Based Mission	NGO
Household preferences			
Affordability	0.759(0.431)	0.699(0.446)	0.735(1.409)
Strong disciplinary environment	0.913(0.388)	2.291** (0.439)	0.215(1.101)
Safe school environment	0.365*** (0.396)	0.940(0.435)	0.486(1.161)
School reputation	1.367(0.394)	3.201*** (0.463)	2.525(1.221)
Academic performance	1.075(0.379)	3.105*** (0.439)	0.430(1.039)
Quality of teaching	0.979(0.375)	1.000(0.411)	0.208(1.133)
Household characteristics			
Age	0.246***(0.043)	0.512***(0.048)	0.341***(0.094)
No. of children in family	0.779(0.220)	1.201(0.272)	2.176(0.677)
Total number in family	1.301(0.142)	0.784(0.186)	0.630(0.485)
School costs	0.849((0.102)	0.873(0.116)	1.287(0.263)
Wealth 1	1.088((0.02)	1.095(0.022)	4.416***(0.030)
Wealth 2	1.103(0.013)	0.967((0.015)	0.781(0.041)
Family Expenditure	2.965***(0.025)	1.770***(0.027)	3.367**(0.045)
Family income	0.951 (0.018)	0.872(0.022)	2.095(0.031)
Highest Household Education	1.028(0.128)	0.880(0.151)	2.596**(0.370)
Proportion of non-Gov/Gov	0.959(0.041)	1.550**(0.040)	0.595**(0.418)
Constant	0.472(1.907)	0.027(2.115)	0.089(4.916)

Omitted category for school type in Government school. Standard errors in parenthesis. *p < 0.10; **p <0.05; ***p < 0.01